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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,080	03/05/2002	William J. Hunt	57080US002	6723
32692	7590	12/08/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			UHLIR, NIKOLAS J	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	
			1773	

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

10/091,080

Applicant(s)

HUNT ET AL.

Examiner

Nikolas J. Uhler

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 23 November 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 4 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on 23 November 2004. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☒ Applicant's reply has overcome the following rejection(s): The rejection of claims 11-12 as unpatentable over Bruxvort.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: none.Claim(s) objected to: none.Claim(s) rejected: 1-19.Claim(s) withdrawn from consideration: none.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☐ Other: _____

Continuation of box 5(c)

The request for reconsideration has been considered but does not place the application in condition for allowance. In the response, applicant first argues against the rejection of claims 17-18 as unpatentable over Bruxvort in view of Chen. Applicant asserts that there no teaching or suggestion to use the dispersants of Chen in the dispersion of Bruxvort, and even if there was, there is no teaching of suggestion in either reference to use a dispersant having the required molecular weight/amine values. More specifically, applicant argues against the examiners characterization of Chen as comprising an acrylate binder and a dispersant. Applicants make specific note of the fact that Chen teaches an abrasive layer comprising a composite wax/acrylic particle (90% wax, 10% polymer such as an acrylate or methacrylate). Applicant therefore asserts that the examiner has mischaracterized Chen in that the binder is not an acrylate.

This argument is unpersuasive. While the examiner acknowledges that Chen does teach a composite wax/acrylate system, this point is largely irrelevant with respect to the argument made by the examiner in the prior rejections. Chen is relied on by the examiner to show that Solsperse 24000 (one of the dispersants used by the applicant) is known in the art to be compatible with acrylates (one of the binders in Bruxvort), and is useful for increasing the dispersability of abrasive particles such as iron oxide, diamond, and titanium oxide. The only limitation Bruxvort places on the use of a dispersant is that the dispersant "must be compatible with the binder precursor and the abrasive particle" (column 21, lines 1-4). Even assuming, *arguendo*, that the applicant correctly characterizes the binder of Chen, this point is meaningless because Chen

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clearly establishes that Solsperse 24000 (along with various other surfactants) are compatible with both the binder and the particles used in Bruxvort. Thus, given that Solsperse 24000 is specifically taught to improve the dispersability of particles that are of the same type as that utilized by Bruxvort in the same type of binder utilized by Bruxvort, the examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Solsperse 24000 as taught by Chen as the dispersant in Bruxvort. One would be especially motivated by this fact, given that Bruxvort essentially states that the surfactant can be any type of surfactant, so long as it is compatible with the binder precursor and the abrasive particles, and Chen clearly establishes that Solsperse 24000 is compatible with both the same type of binder and the same type of particles utilized in Bruxvort, and improves dispersability. Furthermore, the particles of Chen (TiO_2 Fe_2O_3) are recognized as equivalent to Diamond and Cubic Boron Nitride (super abrasive particles). There is no evidence of record that establishes that dispersants used for TiO_2 or Fe_2O_3 would not be suitable for Diamond/Cubic Boron Nitride particles, or any other type of particles for that matter. Thus, this argument is unpersuasive.

Regarding applicant's argument that there is no specific motivation to select a dispersant having the required amine/molecular weight. The examiner notes that Chen specifically names Solsperse 24000 as a preferred dispersant, and thus one of ordinary skill would have been motivated to select Solsperse 24000, for this reason. Further, even if the above is not considered to be sufficient motivation (which the examiner does not concede), Chen teaches the equivalence of Solsperse 24000 to the other

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dispersants listed as suitable. Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In Re Fount* 213 USPQ 532 (CCPA 1982); *In Re Siebentritt* 152 USPQ 618 (CCPA 1967); *Grover Tank & Mfg. Co. Inc V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950). Thus this argument is unpersuasive.

Applicant then argues against the rejection of claims 1-4 and 7-19 as unpatentable over Bruxvort in view of Kamikubo. First, applicant asserts that Kamikubo is not pertinent prior art, as it is directed towards an acid-set coating varnish and not an abrasive article. In response to applicant's argument that Kamikubo is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Kamikubo is both in the field of applicants endeavor and concerned with a particular problem with which the applicant is concerned. The examiner respectfully disagrees with applicant's characterization of the field of endeavor as "abrasive materials." Applicant's invention is drawn towards a composition comprising a binder, particles, and a dispersant, where the resulting composition happens to exhibit abrasive properties. At the very least, one of ordinary skill in this art would have knowledge of compositions comprising polymer binders containing particles and dispersants, as well as dispersions for making the same. This reason alone renders Kamikubo pertinent prior art, as Kamikubo concerns a polymer binder (such as a

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polyester acrylate, which is a polymer disclosed by Bruxvort as a suitable binder) containing particles such as TiO_2 and Fe_2O_3 (disclosed to be abrasive in Bruxvort), and a dispersant. Further, the instant invention is concerned with improving dispersability of abrasive particles in binders. As already noted by the examiner, Kamikubo teaches using a dispersant to improve the dispersability of known abrasive particles (TiO_2 and Fe_2O_3) in a binder. Thus, even if it is deemed that Kamikubo is not in the same field of endeavor, it certainly is concerned with a particular problem with which the applicant is concerned. Thus this argument is unpersuasive.

Applicant then argues that there is no motivation to combine Kamikubo with Chen as suggested by the examiner, and more specifically that there is no teaching or motivation to select a dispersant having the required amine value and molecular weight. Applicant makes particular note of the fact that the pigment particles of Kamikubo ($\text{TiO}_2/\text{Fe}_2\text{O}_3$) are not super abrasive, and asserts that the examiner's conclusion that the dispersants taught by Kamikubo are specifically shown to be compatible with the binder and particles of Bruxvort.

This argument is unpersuasive. Regarding applicant's point about the particles in Kamikubo not being super abrasive. This point is of no effect. The reference by the examiner to the TiO_2 and Fe_2O_3 particles in Kamikubo simply establishes the similarity in composition between the pigment in Kamikubo, and some of the abrasive particles in Bruxvort (which can be TiO_2 or Fe_2O_3 as well). The fact that the particles of Kamikubo are not "super abrasive" is moot as the examiner never once made an argument as to a combination polymer dispersant, and TiO_2 or Fe_2O_3 particles. Rather, the examiner

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notes that the argument has been that it would be obvious to utilize Diamond particles in the combination, not TiO_2 or Fe_2O_3 . Applicant's argument is an attack on Kamikubo individually and so is not persuasive.

Regarding the applicant's argument regarding a lack of motivation to combine. The examiner respectfully disagrees. Bruxvort requires a dispersant to be compatible with the binder and particles used in the invention. The binder can be an acrylate and the particles can be diamond, titania or iron oxide. Bearing this in mind, Kamikubo teaches dispersants that are suitable for improving the dispersability of pigments (such as titanium oxide or iron oxide) in binder (such as an acrylate). Suitable dispersants include commercially available dispersants (such as Solsperse 24000) or dispersants having specific molecular weights and amine values. The examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the surfactants taught by Kamikubo in the coating composition of Bruxvort in view of the fact that the dispersants taught by Kamikubo are specifically shown to be compatible with the binder and particles utilized in Bruxvort and improve dispersability. The examiner is at a loss as to how to respond to applicant's assertion that the examiner's argument that the dispersant in Kamikubo is compatible with the binder and particles of Bruxvort is unsupported. Kamikubo teaches that a dispersant, namely Solsperse 24000, can be used in a system comprising an acrylate binder (which is taught in Bruxvort), and TiO_2 or Fe_2O_3 particles (which are also taught in Bruxvort). If the Kamikubo reference teaches using a dispersant in a composition comprising the same type of binder and the same type of particles, how could it not be compatible?

What would be the point in Kamikubo of adding a dispersant that would be incompatible? Applicant's assertion would have the examiner believe that the dispersant in Kamikubo would be incompatible with the binder and particles to which it is specifically added. However, applicant's implicit assertion is completely uncorroborated and thus unpersuasive. If applicants assertion is that there is no suggestion to use the recited dispersant with super abrasive particles such as Diamond, the examiner notes that Diamond is taught to be equivalent to TiO_2 and Fe_2O_3 by Bruxvort, There is no evidence of record establishing that a dispersant that is suitable for TiO_2 or Fe_2O_3 would not function in the same manner when used with Diamond or Cubic Boron Nitride.

Regarding the argument that there is no motivation to specifically select a dispersant having the specified AV value. This argument is unpersuasive. Not only does Kamikubo specifically note Solsperse 24000, but it is also recognized as equivalent to the other dispersants listed. Substitution of equivalents requires no express so long as the prior art recognizes the equivalency.

Applicants then argue against the rejection of claims 5-6 as unpatentable over Bruxvort in view of Suzuki. Applicant argues that Suzuki is unrelated art, as it is drawn towards a colored composition for use as a colored filter, not abrasive compositions. Further, Applicant argues that even if the references are analogous art, there is no motivation to combine them in the manner asserted by the examiner. Specifically, the applicant argues that the Suzuki particles are not super abrasive, and there is no teaching or suggestion in the art that the dispersants used in Suzuki would be useful as a dispersant for super abrasive particles.

Regarding applicant's nonanalogous art argument. As noted above, for a piece of prior art to be considered analogous art, it must be in the same field of endeavor as that of the invention drawn to a problem with which the invention is concerned. Here, Suzuki is both in the same field of endeavor and concerned with a problem with which the invention is concerned. Applicants once again argue that the relevant field of prior art should be narrowed to abrasive articles. This characterization is unduly narrow, as the applicant's invention is really a combination of particles, a binder, and a dispersant. The resulting combination happens to be abrasive, but one of ordinary skill in the art would certainly have knowledge of a broader class of compositions, namely those containing particles, binder, and a dispersant. Thus, for this reason alone Suzuki should be considered analogous art. However, even if Suzuki is not considered to be in the same field of endeavor, it is certainly concerned with the problem with which the invention is concerned, namely dispersability of particles in a binder. Thus, the examiner maintains that Suzuki is analogous art.

Regarding the applicant's argument that there is no motivation to combine the dispersant of Suzuki with the binder and particles of Bruxvort in the manner suggestion by the examiner. Suzuki teaches dispersants that are suitably used to improve the dispersability of particles that are similar/identical to those used in Bruxvort in binders that are similar/identical to those disclosed in Bruxvort. Solsperse 24000, EFKA 4400 and other amine containing dispersants are noted. The examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the dispersants taught by Suzuki in the coating composition of Bruxvort in view

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of the fact that the dispersants taught by Suzuki are specifically shown to be compatible with the binder and particles utilized in Bruxvort and improve dispersability. Thus, this argument is unpersuasive.

For the above reasons, all of the applicant's arguments are deemed to be unpersuasive in overcoming the maintained rejections.

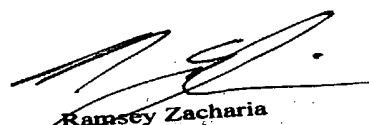
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 571-272-1517. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Nju


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